AMENDMENTS

In the claims

Please cancel claims 51-85 without prejudice or disclaimer.

Please add new claims 86-133.

86. (New) A substantially isolated polynucleotide comprising a sequence that encodes a polypeptide comprised of either or both of a H chain V region and L chain V region of an antigen binding polypeptide, wherein said antigen binding polypeptide competitively inhibits specific binding of an ScFv or antibody to a cancer cell surface epitope, wherein the ScFv or antibody is comprised of the amino acid sequences of the H chain V region and the L chain V region of the polypeptide in SEQ ID NO: 13, and wherein the antigen binding polypeptide specifically recognizes a cancer cell surface and does not recognize a normal non-cancerous cell surface.

87. (New) The polynucleotide of claim 86, wherein said antigen binding polypeptide specifically recognizes any one or more of at least glioma, melanoma, breast carcinoma, lung carcinoma, ovarian carcinoma, lymphoma, gastric carcinoma, colon carcinoma or prostate carcinoma cells.

88. (New) The polynucleotide of claim 86, wherein said antigen binding polypeptide specifically recognizes a heptapeptide displayed by peptide phage display, said heptapeptide selected from the group consisting of:

Phe-His-Arg-Tyr-Ser-Leu-Pro (SEQ ID NO:20);
Phe-His-Arg-Tyr-Ser-Asp-Tyr (SEQ ID NO:21);
Phe-His-Arg-Tyr-Ser-Pro-Thr (SEQ ID NO:23);
Phe-His-Arg-Tyr-Thr-Pro-Gly (SEQ ID NO:24); and
Met-His-Arg-Tyr-Thr-Pro-Leu (SEQ ID NO:28).

89. (New) The polynucleotide of claim 86, wherein the antigen-binding polypeptide specifically recognizes an N-terminus pentapeptide consensus sequence Phe-His-Arg-Tyr-Ser/Thr (SEQ ID NO:19) displayed as part of a heptapeptide by peptide phage display.

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90. (New) The polynucleotide of claim 86, wherein the polynucleotide encodes at least 5 amino acids of either or both of the amino acid sequences of the H chain V region and the L chain V region of the polypeptide in SEQ ID N0:13.

91. (New) The polynucleotide of claim 86, wherein the polynucleotide comprises at least 20 consecutive nucleotides of the sequence of either or both of the H chain V region and the L chain V region of the polynucleotide in SEQ ID NO:13.

92. (New) The polynucleotide of claim 86, wherein the polynucleotide comprises a region of at least 20 consecutive nucleotides which is maintained in a stable duplex under stringent conditions with a complement of a second polynucleotide, wherein the second polynucleotide encodes a ScFv or antibody comprised of the amino acid sequences of the H chain V region and the L chain V region of the polypeptide in SEQ ID NO: 13, wherein stringent conditions comprise 0.1X SSC, 75% formamide, and incubation at 68°C.

93. (New) The polynucleotide of claim 92, wherein the polynucleotide comprises a region of at least 100 consecutive nucleotides which forms a stable duplex under stringent conditions with the complement of the second polynucleotide.

94. (New) The polynucleotide of claim 92, wherein the polynucleotide comprises a region of at least 200 consecutive nucleotides which forms a stable duplex under stringent conditions with the complement of the second polynucleotide.

95. (New) The polynucleotide of claim 86 or 87, wherein the antigen binding polypeptide comprises a CDR region of the polypeptide in SEQ ID NO: 13.

96. (New) The polynucleotide of claim 86 or 87, wherein the antigen binding polypeptide comprises at least five consecutive amino acid residues of the H chain CDR1, CDR2, or CDR3 of the polypeptide in SEQ ID NO: 13.

97. (New) The polynucleotide of claim 86 or 87, wherein the antigen binding polypeptide comprises at least six consecutive amino acid residues of the H chain CDR2 or CDR3 of the polypeptide in SEQ ID NO: 13.

98. (New) The polynucleotide of claim 86 or 87, wherein the antigen binding polypeptide comprises at least seven consecutive amino acid residues of the H chain CDR2 or CDR3 of the polypeptide in SEQ ID NO: 13.

99. (New) The polynucleotide of claim 86 or 87, wherein the antigen binding polypeptide comprises at least eight consecutive amino acid residues of the H chain CDR2 or CDR3 of the polypeptide in SEQ ID NO: 13.

100. (New) The polynucleotide of claim 86 or 87, wherein the antigen binding polypeptide comprises at least five consecutive amino residues of the L chain CDR1, CDR2, or CDR3 of the polypeptide in SEQ ID NO: 13.

101. (New) The polynucleotide of claim 86 or 87, wherein the antigen binding polypeptide comprises at least six consecutive amino acid residues of the L chain CDR1, CDR2, or CDR3 of the polypeptide in SEQ ID NO: 13.

102. (New) The polynucleotide of claim 86 or 87, wherein the antigen binding polypeptide comprises at least seven consecutive amino acid residues of the L chain CDR1, CDR2, or CDR3 of the polypeptide in SEQ ID NO: 13.

103. (New) The polynucleotide of claim 86, wherein the antigen binding polypeptide comprises at least 25 amino acids of a variable region of the polypeptide in SEQ ID NO:13.

104. (New) The polynucleotide of claim 86, wherein the antigen binding polypeptide comprises at least 30 amino acids of a variable region of the polypeptide in SEQ ID NO:13.

105. (New) The polynucleotide of claims 86, wherein polynucleotide further encodes at least one chemically functional moiety.

106. (New) The polynucleotide of claim 105, wherein the at least one chemically functional moiety is selected from the group consisting of a signal peptide, an agent that enhances immunologic reactivity, an agent that facilitate coupling to a solid support, a carrier, a bioresponse modifier, a toxin, a detectable label, and a drug.

107. (New) The polynucleotide of claim 106, wherein the signal peptide is prokaryotic.

108. (New) The polynucleotide of claim 106, wherein the agent that enhances immunologic reactivity is a bacterial superantigen.

109. (New) The polynucleotide of claim 106, wherein the bioresponse modifier is a cytokine.

110. (New) The polynucleotide of claim 106, wherein the toxin is selected form the group consisting of ricin, pokeweed antiviral protein, Pseudornonas exotoxin A, diphtheria toxin, ricin A chain, restrictocin, and phospholipase enzymes.

111. (New) The polynucleotide of claim 86 or 87, wherein the antigen binding polypeptide is selected from the group consisting of whole native antibodies, bispecific antibodies, chimeric antibodies, Fab, F(ab')2, single chain V region fragments (scFv) and fusion polypeptides.

112. (New) The polynucleotide of claim 86 or 87, wherein said antigen binding polypeptide is an antigen binding polypeptide of a human antibody.

113. (New) The polynucleotide of claim 86 or 87, wherein the antigen binding polypeptide comprises human immunoglobulin sequences.

114. (New) The polynucleotide of claim 86 or 87, wherein said antigen binding polypeptide comprises human framework sequences.

115. (New) A cloning vector comprising a polynucleotide of claim 86 or 87.

116. (New) An expression vector comprising a polynucleotide of claim 86 or 87.

117. (New) A host cell comprising a polynucleotide of claim 86 or 87.

118. (New) A composition comprising a polynucleotide of claims 86 or 87.

119. (New) A process for making a polynucleotide of claim 86 or 87 comprising preparing the polynucleotide using one or method selected from: chemical synthesis, nucleic acid amplification, and recombinant cloning methods.

120. A process for making an antigen binding polypeptide by expressing a polynucleotide of claim 86 in a host cell.

121. (New) A polynucleotide encoding a diabody comprising an antigen binding polypeptide according to claim 86 or 87.

122. (New) A polynucleotide encoding a dimer comprising an antigen binding polypeptide according to claim 86 or 87.

123. (New) The polynucleotide according to claim 86 or 87 wherein the antigen binding polypeptide does not specifically recognize any one of normal non-cancerous adrenal, bladder, cervix, esophagus, eye, heart, kidney, liver, muscle, pancreas, parotid, pituitary, small intestine, spinal cord, spleen, thymus, thyroid, testis, or uterus cells.

124. (New) A polynucleotide encoding a plurality of peptides according to claim 86 or 87.

125. (New) The polynucleotide of claim 86 or 87 , wherein the antigen binding polypeptide is a humanized antigen binding polypeptide.

126. (New) The polynucleotide of claim 86 or 87, wherein the antigen binding polypeptide comprises a heterologous immunoglobulin constant region.

127. (New) The polynucleotide of claim 86 or 87, wherein the polynucleotide encodes a ScFv or antibody to a cancer cell surface epitope, wherein the ScFv or antibody is comprised of the amino acid sequences of the H chain V region and the L chain V region of the polypeptide in SEQ ID NO: 13, and wherein the antigen binding polypeptide specifically recognizes a cancer cell surface and does not recognize a normal non-cancerous cell surface.

128. (New) The polynucleotide of claim 86 or 87, wherein the antigen binding polypeptide is a polypeptide derivative or a functionally equivalent fragment of the ScFv or antibody.

129. (New) The polynucleotide of claim 86 or 87, wherein said antigen binding polypeptide has a H or L chain CDR1, CDR2, or CDR3 which consists of the amino acid sequence of the corresponding CDR of said scFv or antibody or with exception of one or more deletions, additions or substitutions relative to the amino acid sequence, while having substantially the same specificity of the scFv or antibody.

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130. (New) The polynucleotide of claim 86 or 87, wherein the antigen binding polypeptide comprises at least a portion of a variable region of the scFv or antibody such that said antigen binding polypeptide retains the specificity of the scFv or antibody.

131. (New) The polynucleotide of claim 86 or 87, wherein the antigen binding polypeptide comprises consecutive K or L chain V region amino acid residues which correspond identically to the corresponding V region amino acids of the scFv or antibody, with the exception of one or more deletions, additions or substitutions relative to the amino acid sequence, while having substantially the same specificity of the scFv or antibody.

132. (New) The polynucleotide of claim 86 or 87, wherein the antigen binding polypeptide comprises at least one CDR amino acid which plays a role in the specificity of the scFv or antibody.

133. (New). A polynucleotide encoding an antigen binding polypeptide, which is the anti-idiotype of the antigen binding polypeptide of claim 88.